

4th BDE PCU Study Preliminary Results



ET Jackson

Department of Physical Education

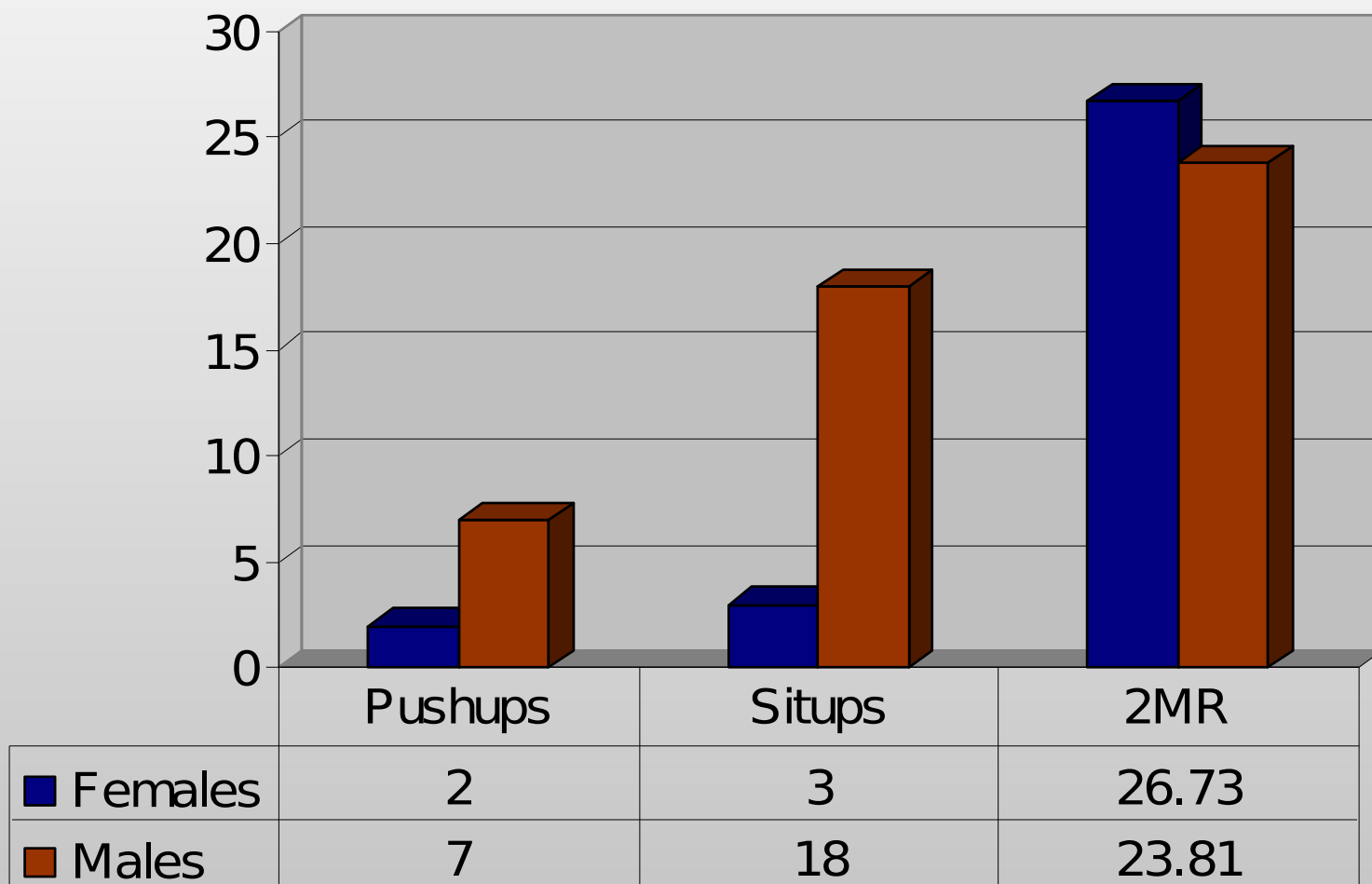
PURPOSE

The purpose of this study was to implement an alternative physical conditioning POI for soldiers who failed the initial physical fitness assessment.

The three major objectives were:

- Decrease risk of injury.**
- Decrease all cause attrition.**
- Increase performance on Week 7 APFT.**

Pre-CBT Minimum Scores (07)



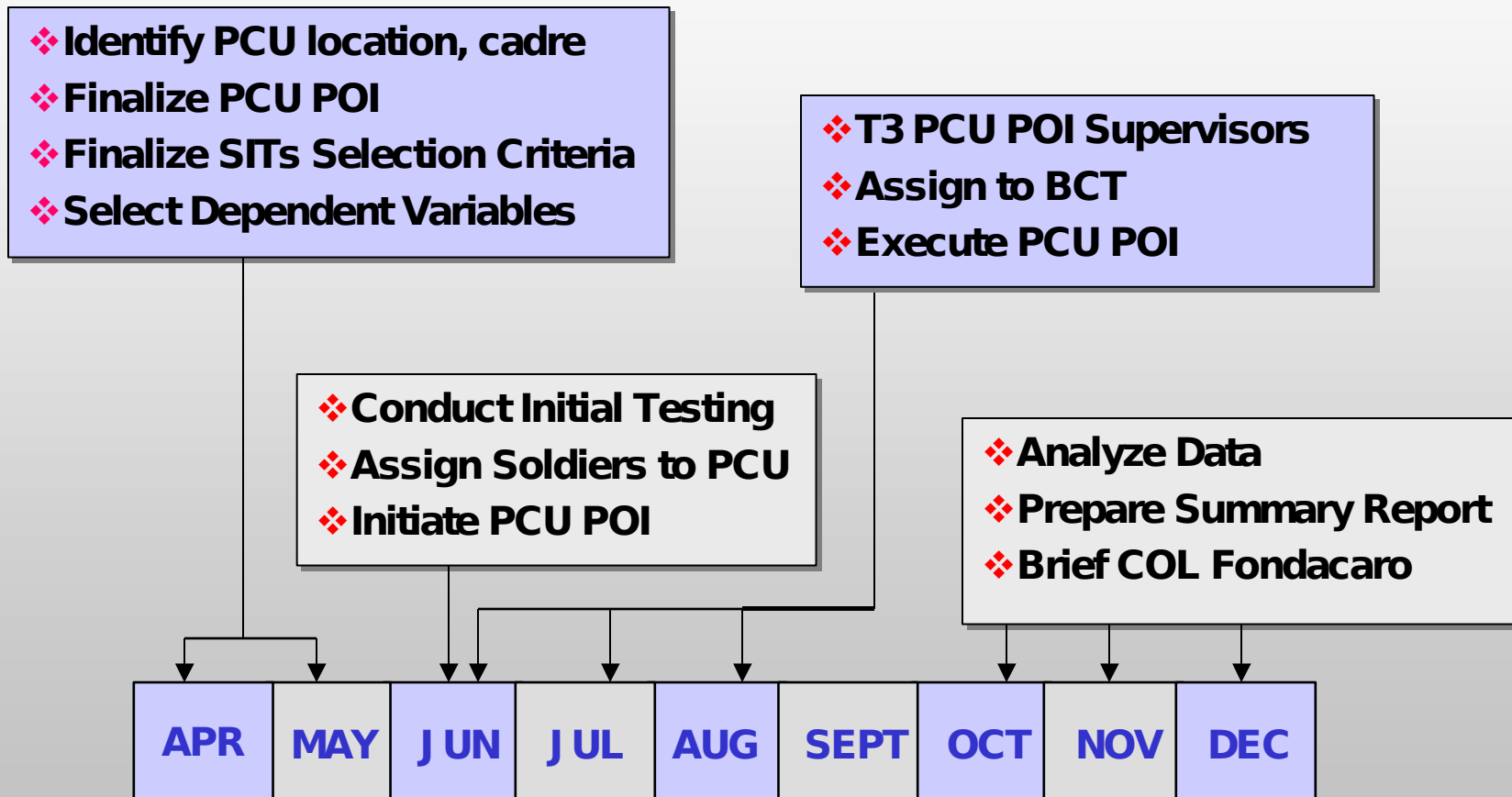
PRE-CBT APFT (07)

#OF CADETS TESTED	1256
AVERAGE (375 PT SCALE)	231
FAILURES (50 PT SCALE)	26 % n = 330, mean 182
FAILURES (60 PT SCALE)	41 % n = 515, mean 194

IET Research Team

- **DR Matt Beekley, PhD (Exercise Physiology)**
- **DR Todd Crowder, PhD (Exercise Physiology)**
- **DR Whitfield East, EdD (Measurement and Evaluation)**
- **DR Sue Tendy (Movement Specialist)**
- **DR Tom Horne, PhD (Movement Specialist)**
- **COL Maureen LeBoeuf, PhD (Physical Education)**
- **CPT Jon Alt, MS (Strength Training)**
- **MR Craig Yunker, MS, ATC/L (Athletic Training)**
- **MR Tim Kelly, ATC/L (Athletic Training)**
- **MR Ken Cameron, ATC/L (Athletic Training)**
- **LTC Joe Moore (Physical Therapy)**
- **MAJ Danny McMillian (Physical Therapy)**
- **DR Ray Wood (Sport Psychology)**
- **MR Ray Barone (Strength Development/Conditioning)**

IET Timeline



Weekly/Daily Training POI

- **2 Cardio sessions/day**
 - Impact
 - Non-impact
- **1 MSE session/day alternating extremities/core body**
- **Red Phase military skills**
- **Wellness and personal fitness lessons**

Experimental Protocol

- **250 subjects (125 male/125 female) who failed the RBn physical fitness test.**
- **Subjects were housed at Alpha 1/61.**
- **Participated in 4 weeks of physical training.**
- **Retested on week 5 and shipped to BCT - 1/34 and 2/39.**
- **Physical performance, injury, and attrition were tracked for BCT.**

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Cycle 1- 1	16-J un	17-J un	18-J un	19-J un	20-J un	21-J un	22-J un
Value of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0600-0800	Warm-up	Warm-up	Warm-up	Warm-up	Warm-up	Warm-up	
	Trail Walk	Track Intervals	Hill Intervals	Trail Walk	Track Intervals	Hill Intervals	Recovery
	1.5 miles	W - R	W - R	1.5 miles	W - R	W - R	
	Alpha 1-61 PT	2-39 Track	Alpha 1-61 PT	Alpha 1-61 PT	2-39 Track	Alpha 1-61 PT	
	Stretch	Stretch	Stretch	Stretch	Stretch	Stretch	
	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	
0800-0900	Chow/PH	Chow/PH	Chow/PH	Chow/PH	Chow/PH	Chow/PH	Chow/PH
0900-1030	D&C PD 2	D&C PD 3 (Individual Drill)	Army Values	Equal Opportunity	D&C (Reinforce)	AL-DG/FA/ Rape	
	DS Baxter	DS Aiken	1SG Yarborough	1SG Yarborough	DS Norton	1SG Yarborough	
1030-1200	MSE 1	MSE 2	MSE 1	MSE 2	MSE 1	MSE 2	
	DS Cruz	DS Cruz	DS Cruz	DS Cruz	DS Cruz	DS Cruz	
1200-1300	Chow	Chow	Chow	Chow	Chow	Chow	Chow
1300-1345	Introduction to Wellness	Exercise Adherence	How to Run - Running Shoes	Principles of CRE Exercise	Nutrition I	Nutrition II	
	Dr. East	Dr. Home	Dr. Home	Dr. Home	Dr. Home	Dr. Home	
1400-1500	Pool	Pool	Pool	Pool	Pool	Pool	
	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	
1530-1700	DS Time	DS Time	DS Time	DS Time	DS Time	DS Time	
1700-1800	Chow	Chow	Chow	Chow	Chow	Chow	Chow
1800-2100	DS Time	DS Time	DS Time	DS Time	DS Time	Values Wrap Up	

Set the standard...maintain the standard

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Cycle 1 - 4	7-J ul	8-J ul	9-J ul	10-J ul	11-J ul	12-J ul	13-J ul
Value of Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
0600-0800	Warm-up	Warm-up	Warm-up	Warm-up	Warm-up	Warm-up	Recovery
	Trail Walk	Hill Intervals	Track Intervals	Trail Walk	Hill Intervals	Track Intervals	
	4 miles	W-R-R-R	W-R-R-R	4 miles	W-R-R-R	W-R-R-R	
	Darby Field	Alpha 1-61 PT	Pecan Orchard	Darby Field	Alpha 1-61 PT	Pecan Orchard	
	Stretch	Stretch	Stretch	Stretch	Stretch	Stretch	
	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	
0800-0900	Chow/PH	Chow/PH	Chow/PH	Chow/PH	Chow/PH	Chow/PH	Chow/PH
0900-1030	Guard Duty PD-2	D&C PD-5 (Sqd.)	Inspection PD-1	D&C PD-6 (Platoon)	Inspection PD-2	BRM (Enhancement)	
	DS Lyde	DS Norton	1SG Yarborough	DS Norton	CPT Davis	DS Norton	
1030-1200	MSE 1	MSE 2	MSE 1	MSE 2	MSE 1	MSE 2	
	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	DS Norton	
1200-1300	Chow	Chow	Chow	Chow	Chow	Chow	Chow
1300-1345	D & C (Reinforce)	Report Info Potential Intel. (SALUTE)	Perform Voice Commo	FA (Reinforce)	Map (Reinforce)	Cmdrs Time	
	DS Harps	DS Norton	DS Norton	DS Grubbs	DS Sharp		
1400-1500	Bike	Pool	Bike	Pool	Pool	Pool	
	DS Lyde	DS Horval	DS Lyde	DS Horval	DS Lyde	DS Horval	
1530-1700	DS Time	DS Time	DS Time	DS Time	DS Time	DS Time	
1700-1800	Chow	Chow	Chow	Chow	Chow	Chow	Chow
1800-2100	DS Time	DS Time	DS Time	DS Time	DS Time	Values Wrap Up	

Set the standard...maintain the standard









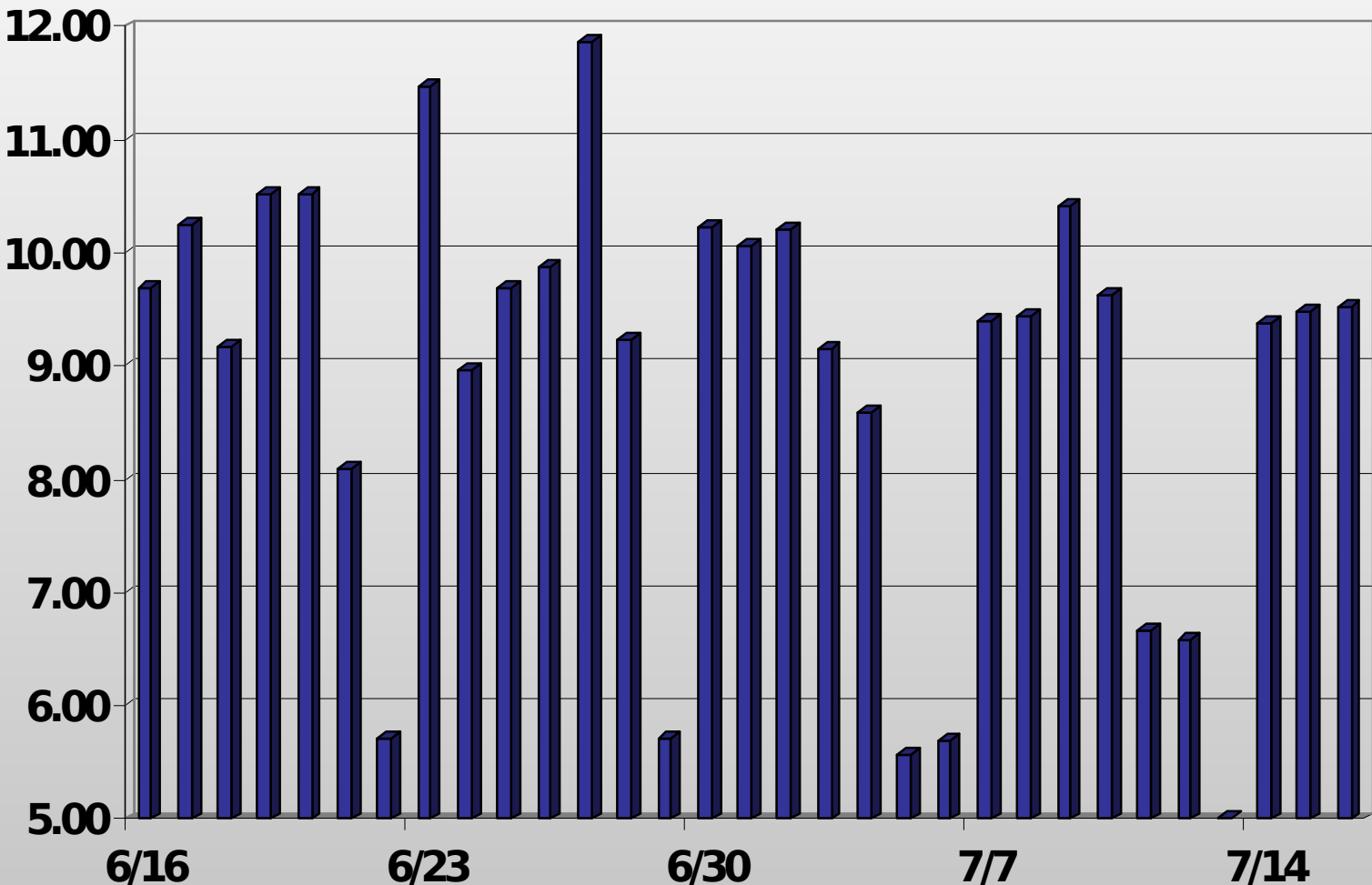




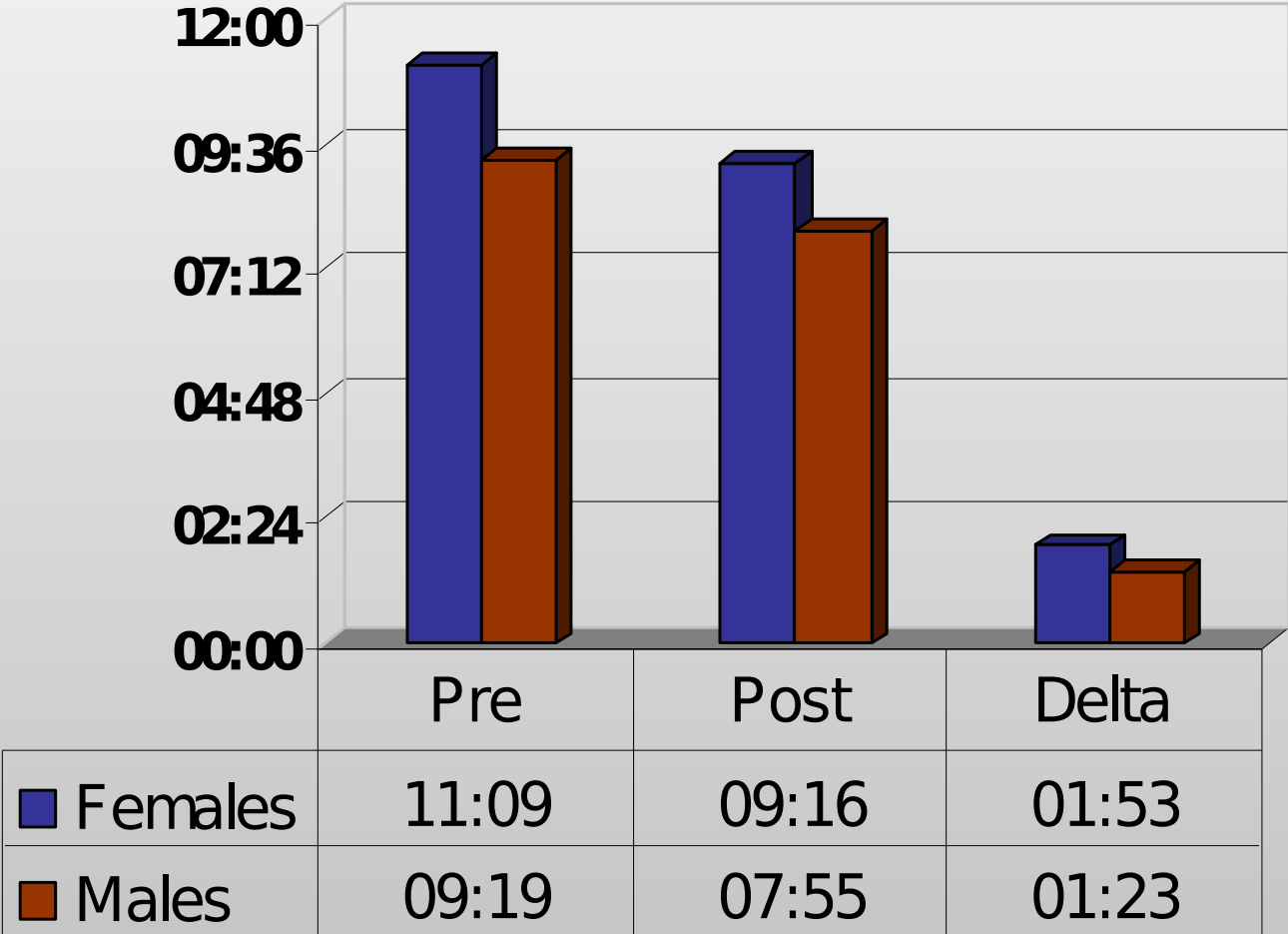




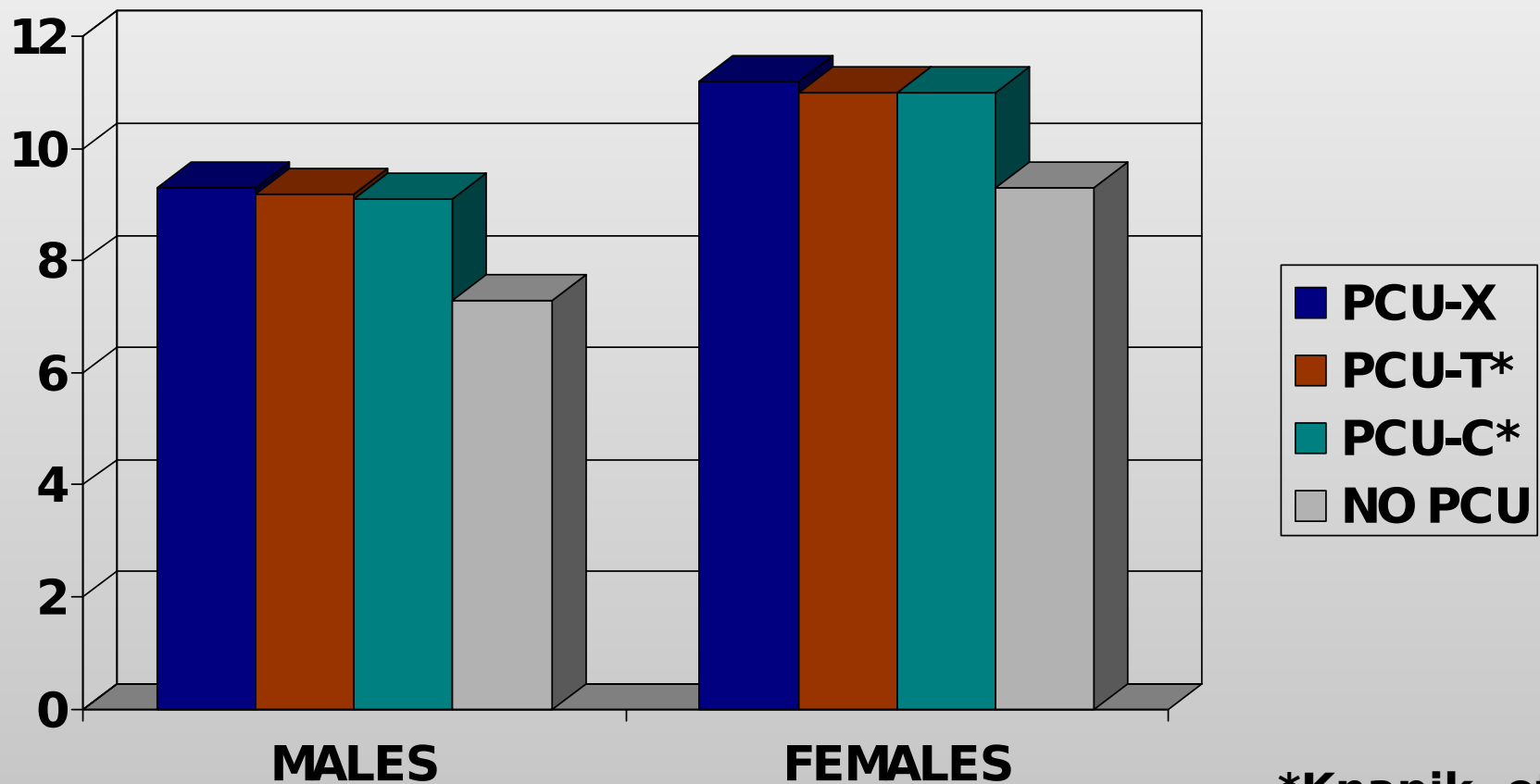
Miles per Day



PCU-X 1MR

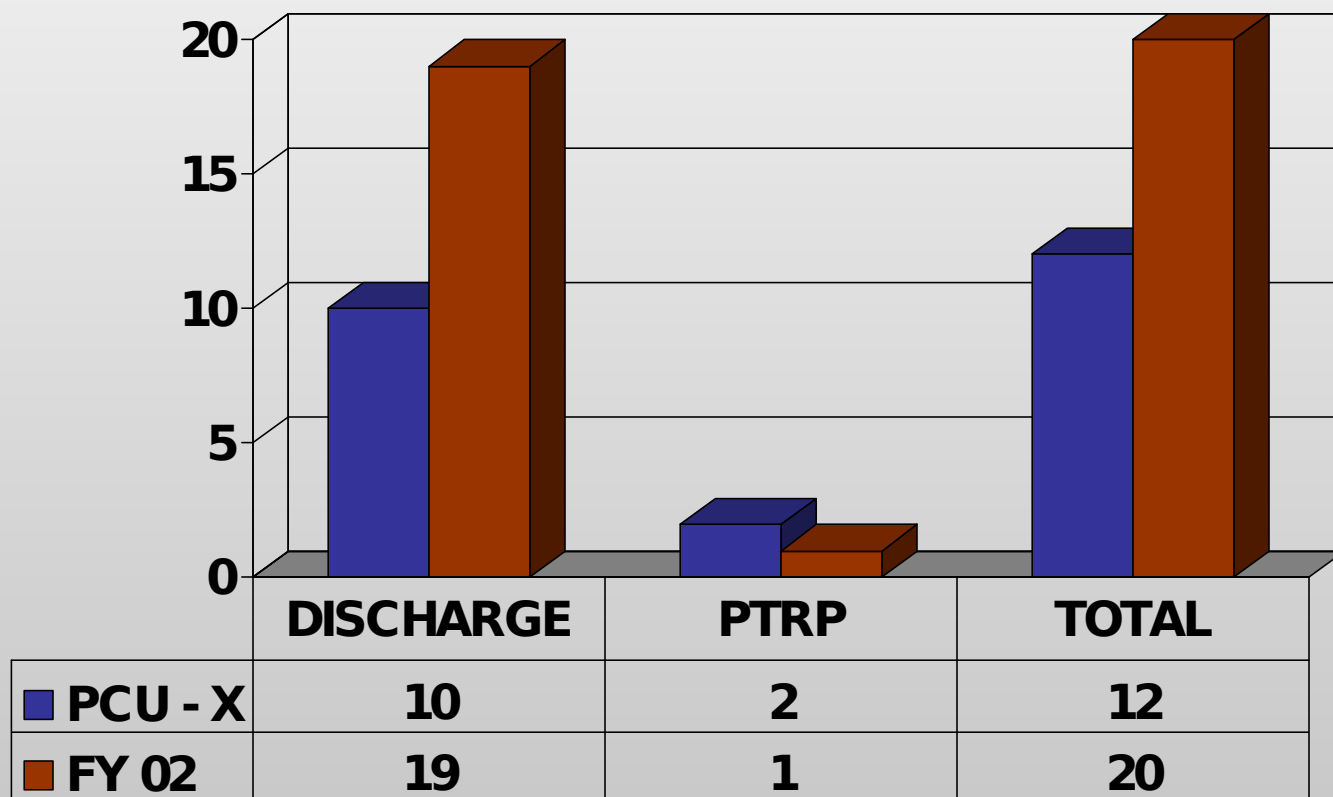


Reception Bn 1MR

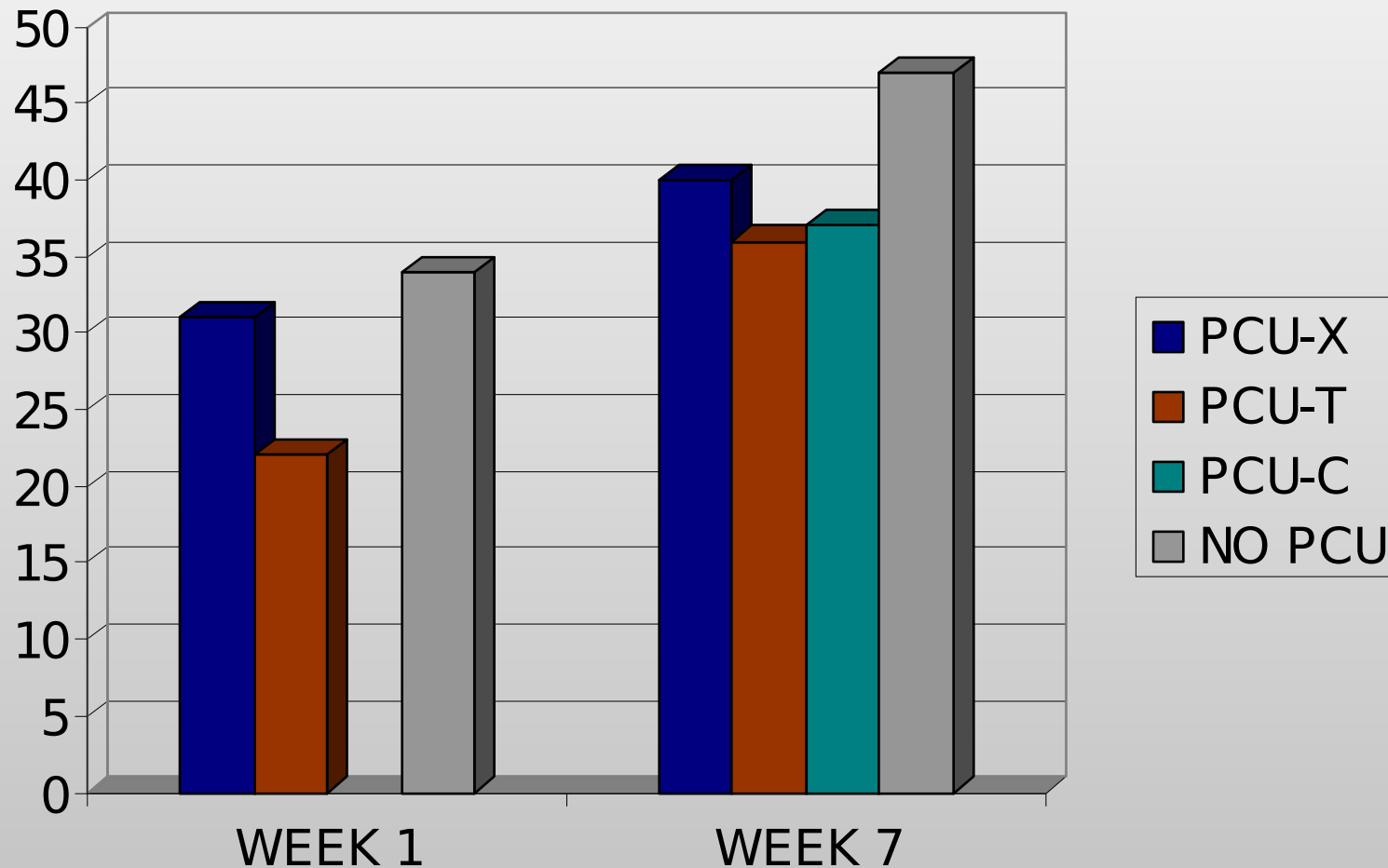


*Knapik, et.
al.

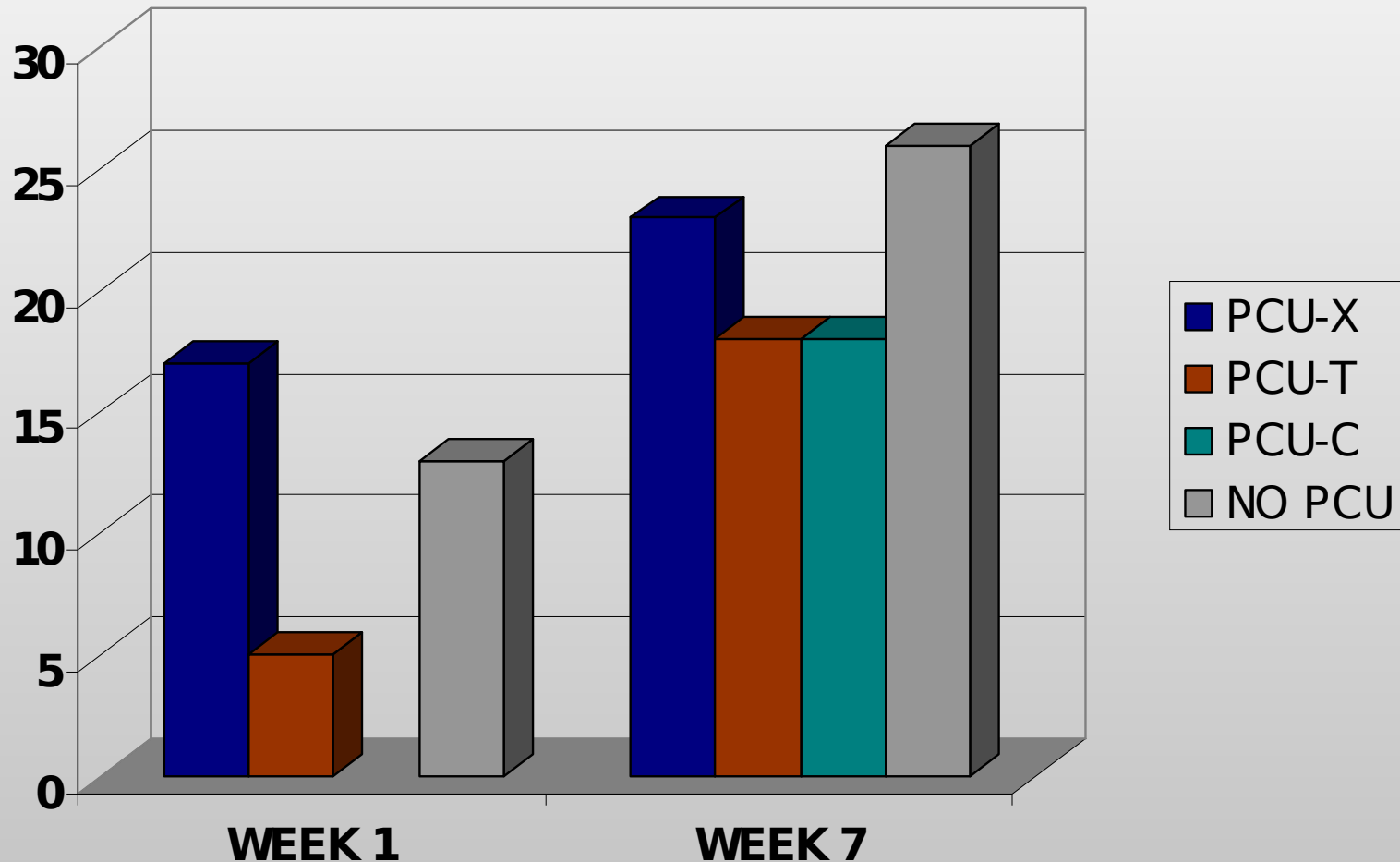
Percentage PCU ATTRITION



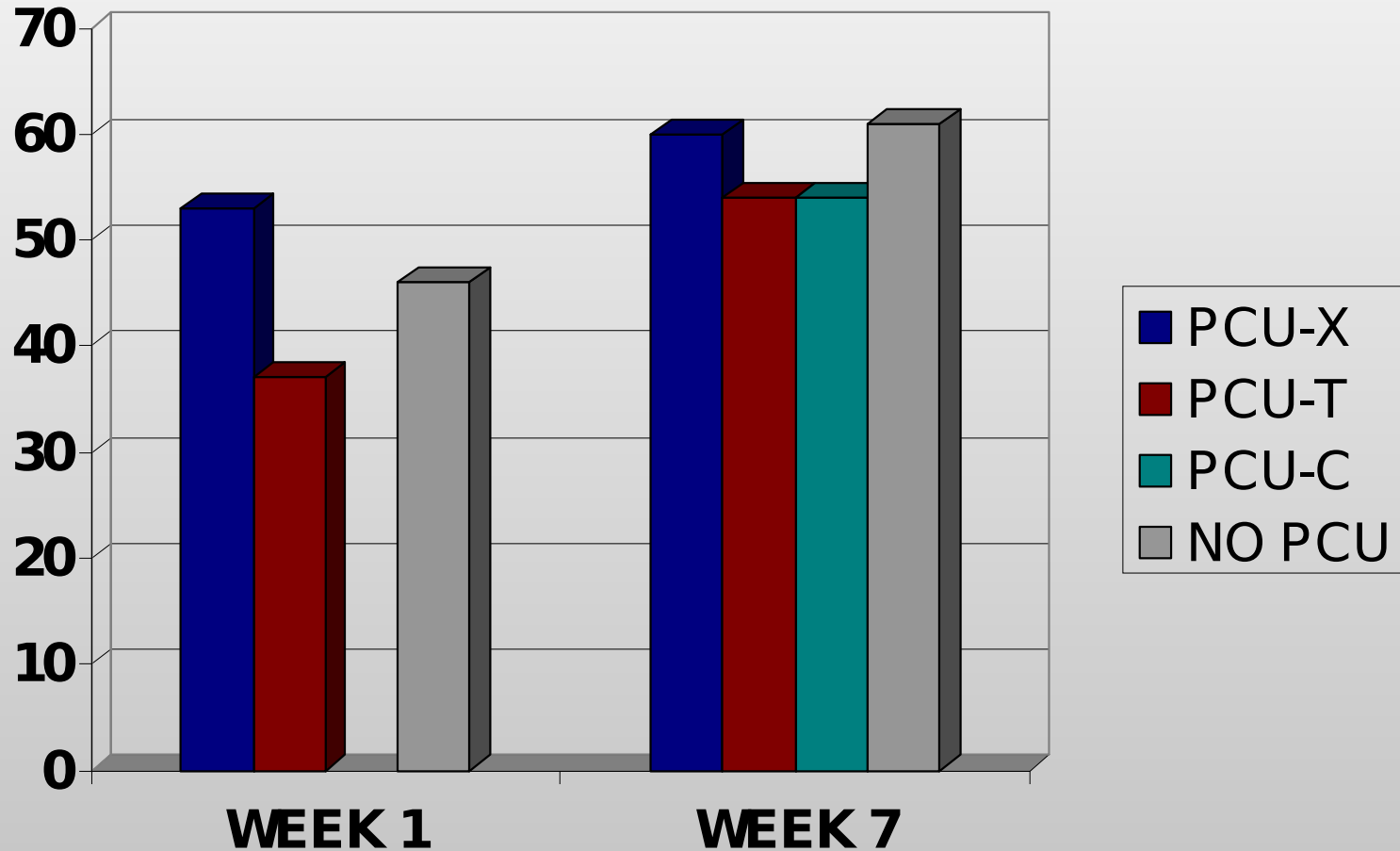
PUSH-UPS (MALES)



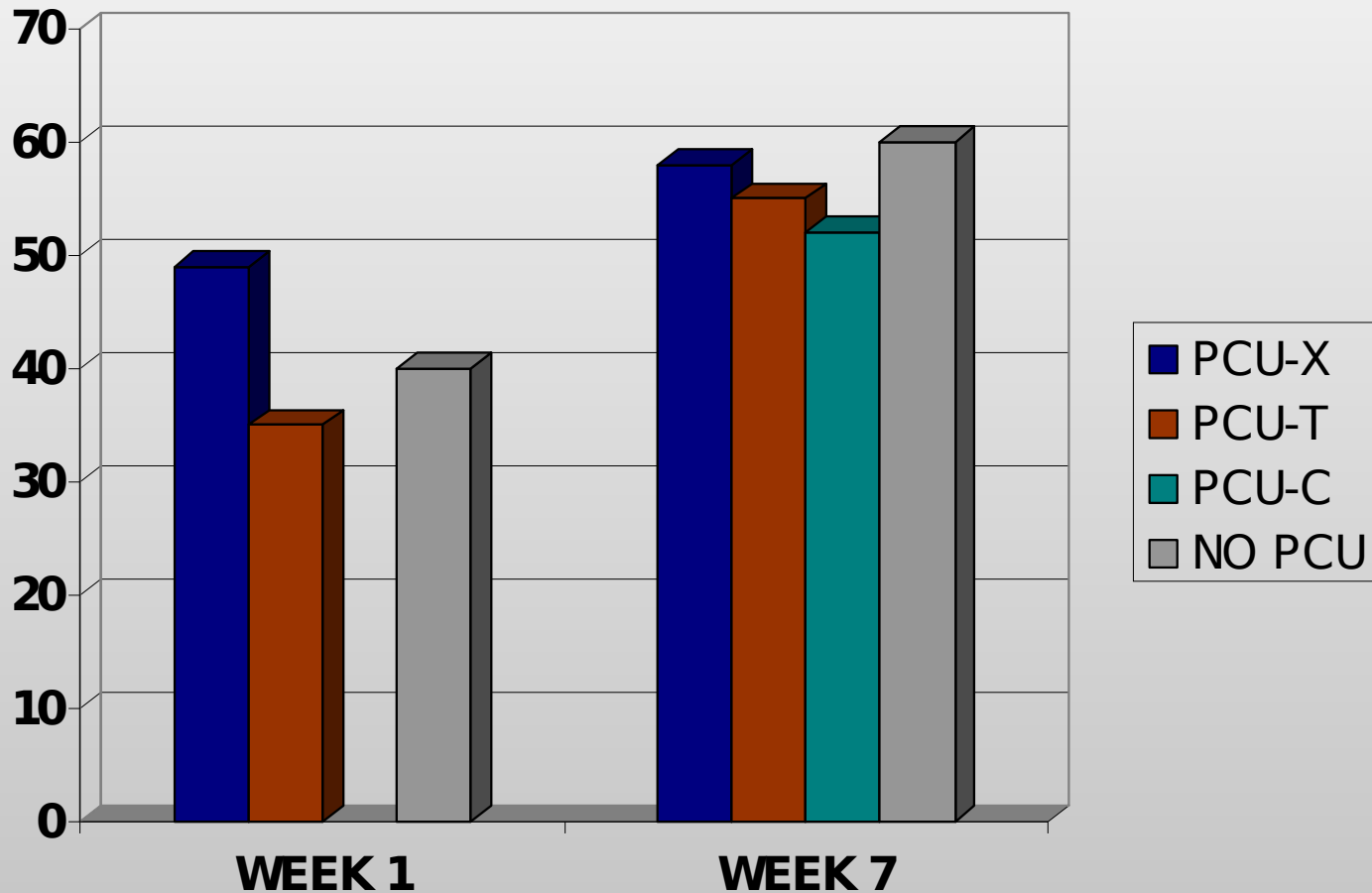
PUSH-UPS (FEMALES)



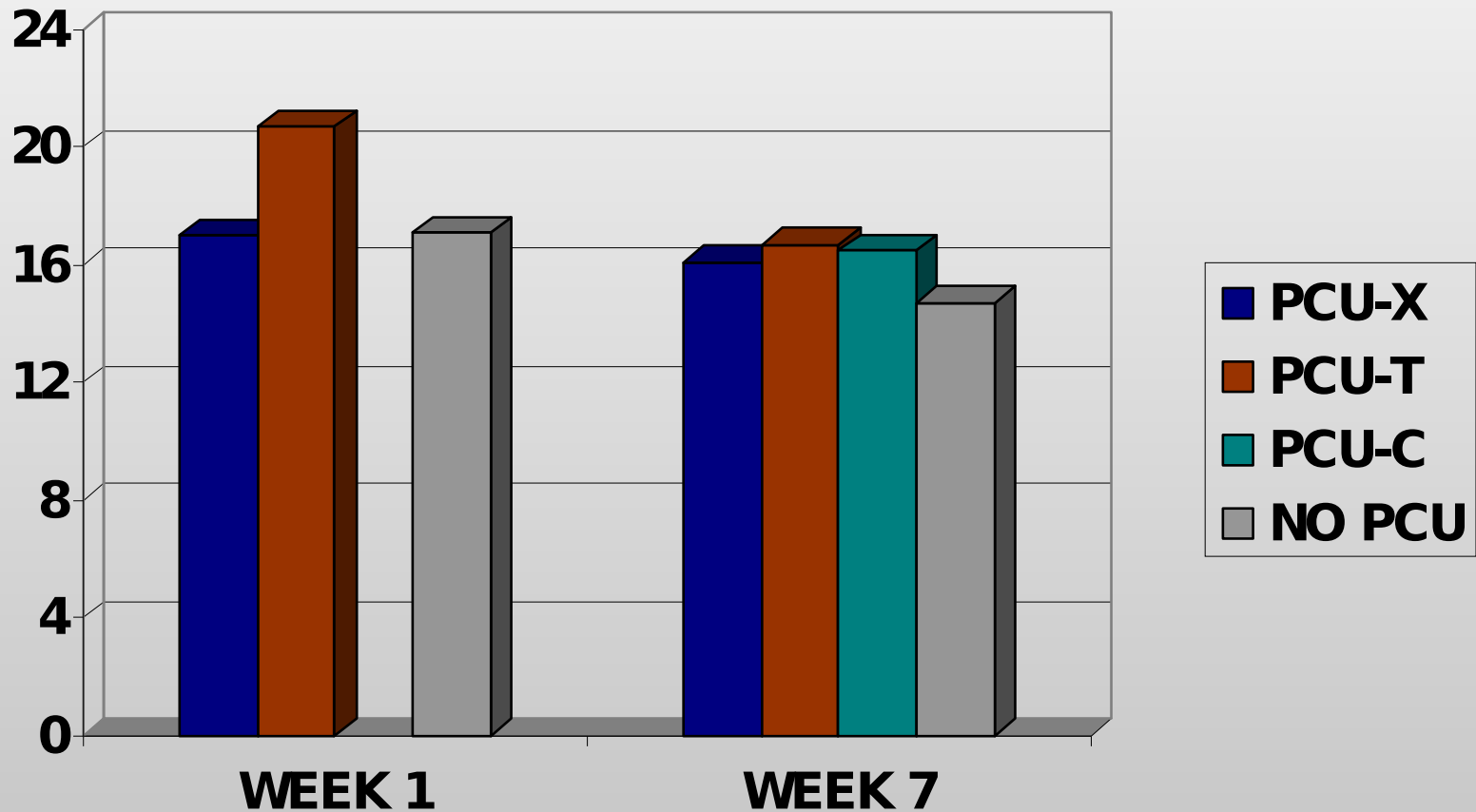
SIT-UPS (MALES)



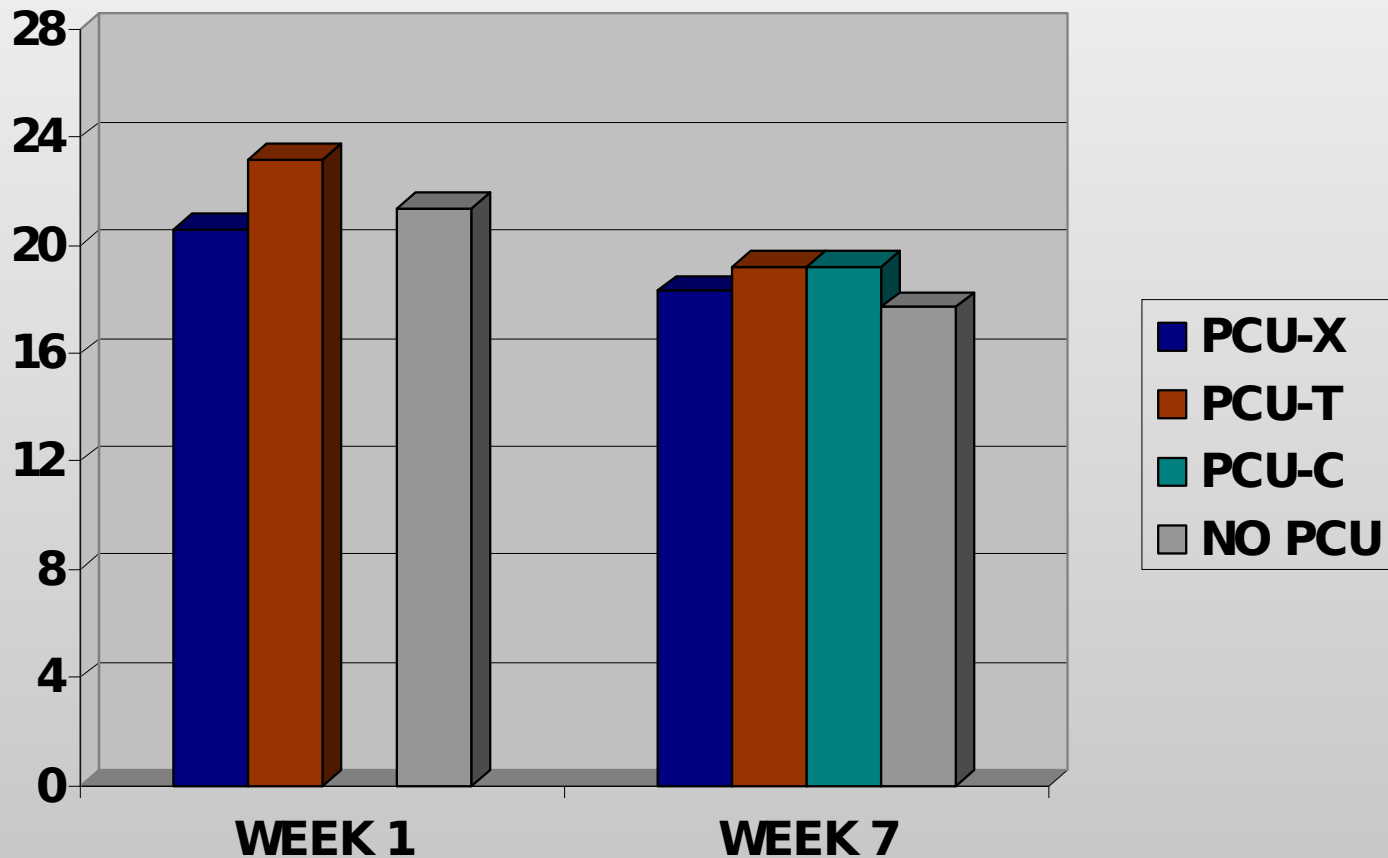
SIT-UPS (FEMALES)



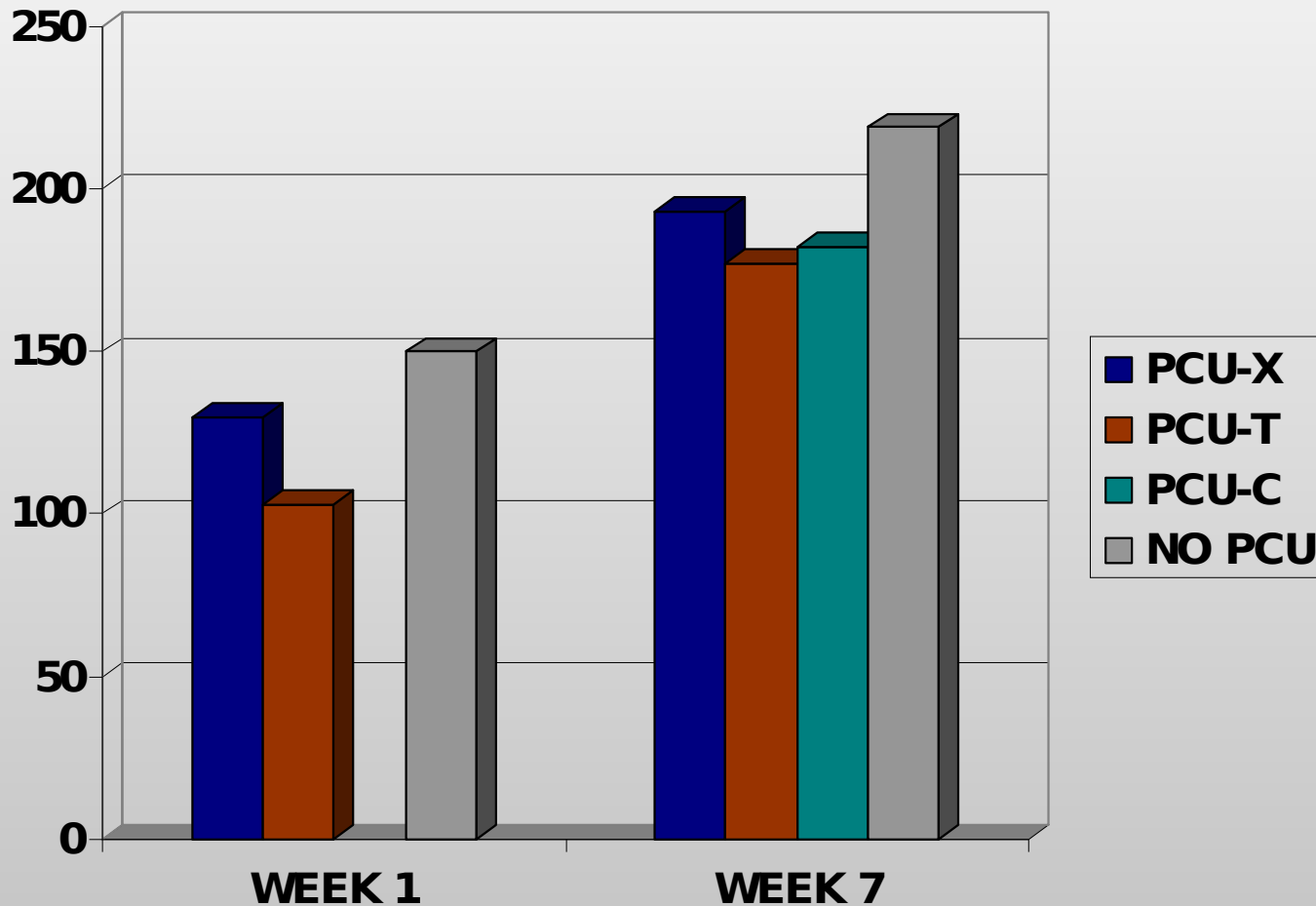
2MR (MALES)



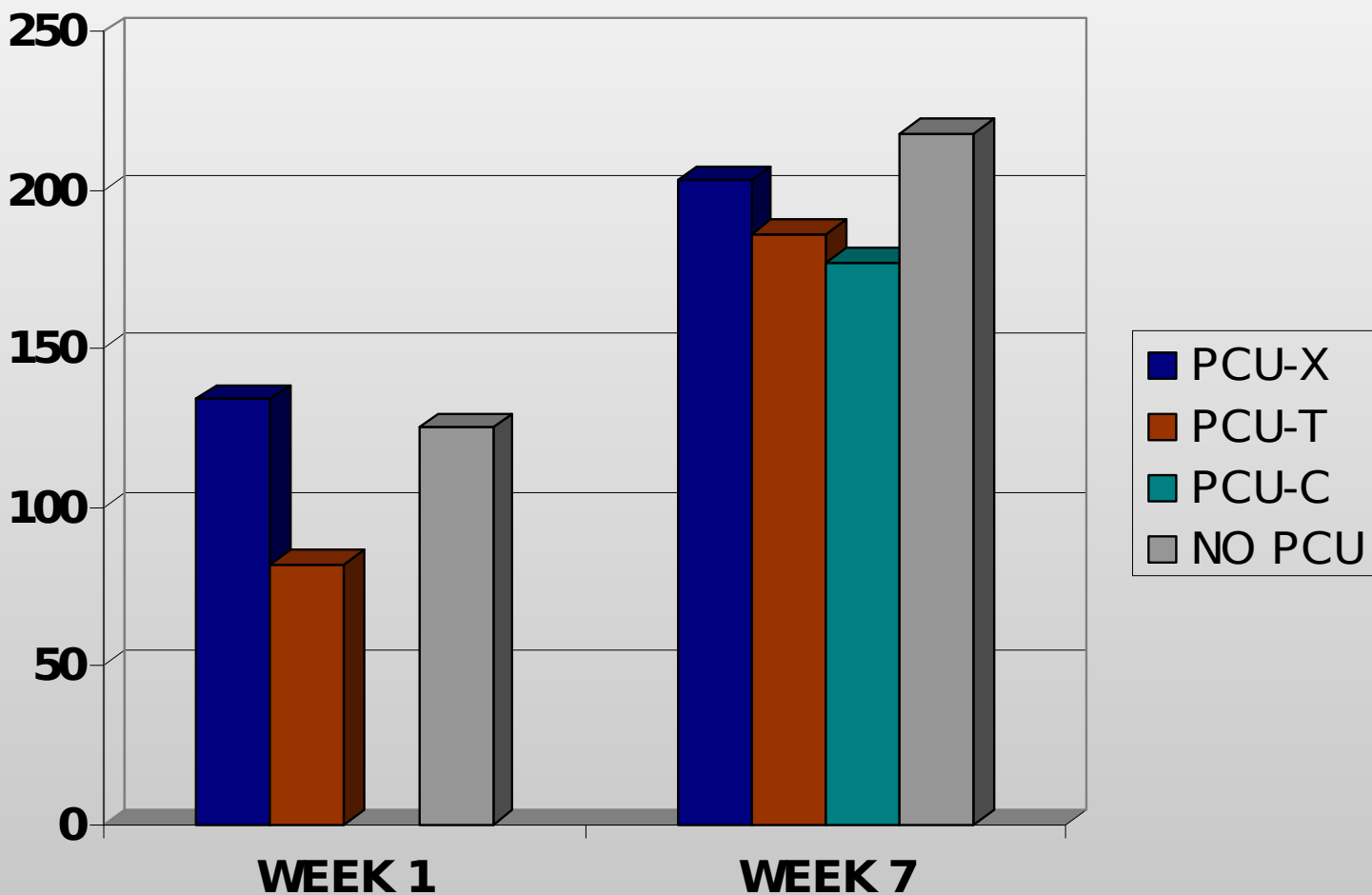
2MR (FEMALES)



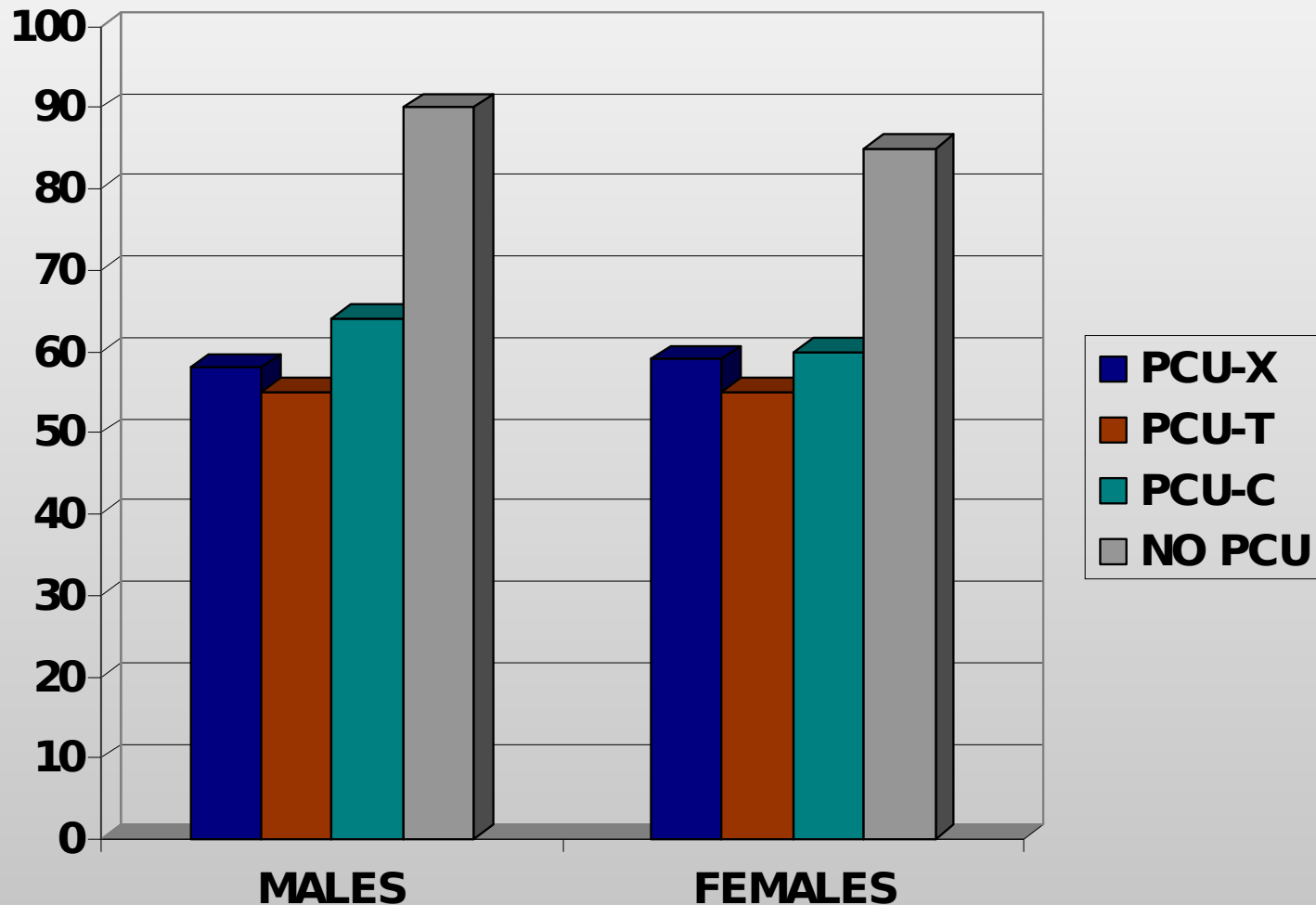
APFT TOTAL POINTS (MALES)



APFT TOTAL POINTS (FEMALES)



PERCENTAGE PASSING APFT

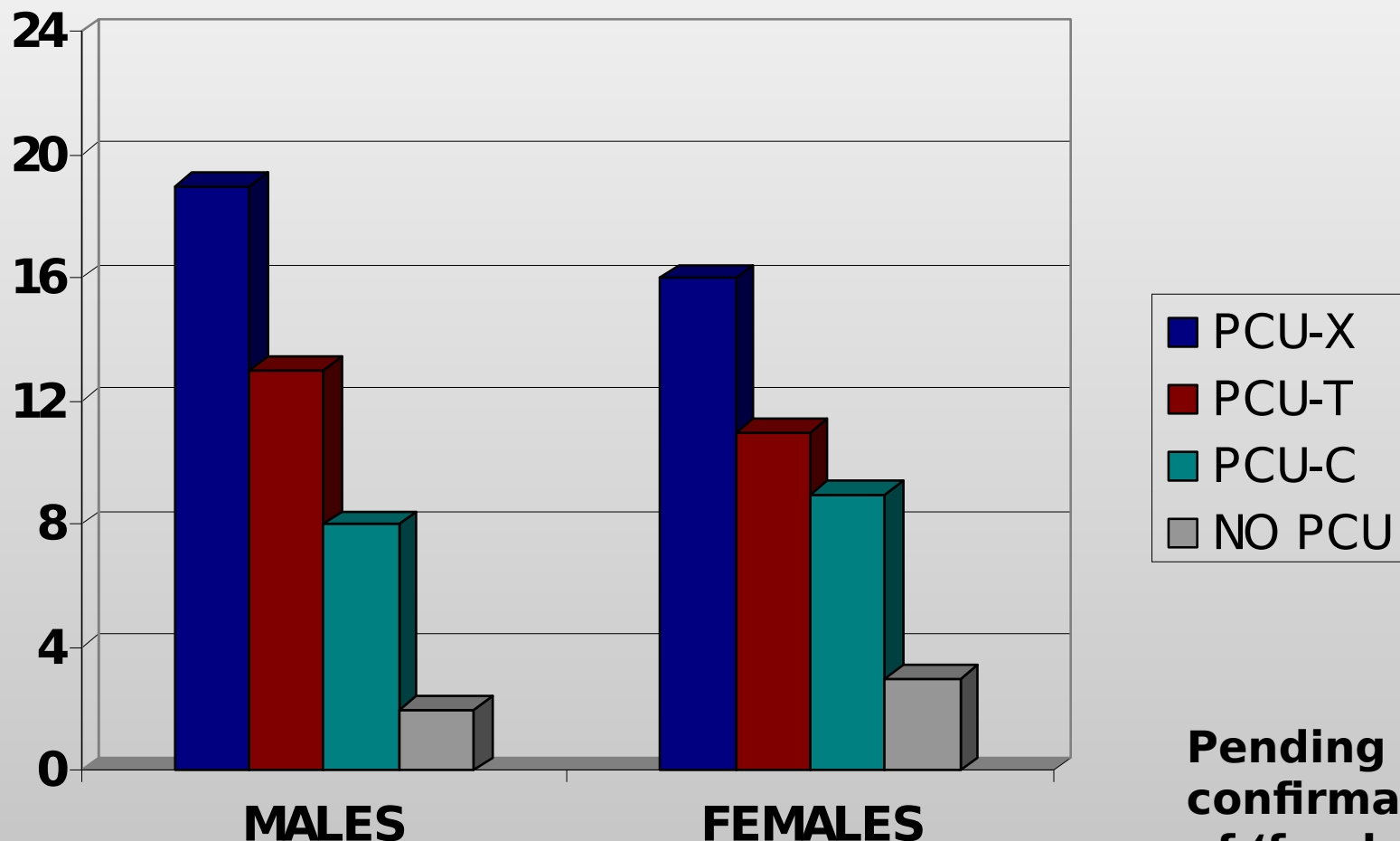


APFT Results by BN (pass)

TRN BN		APFT Averages			
	Gender	Pushups	Situps	2 MR	Total
1-34	Females	26	62	18:05	216
	Males	44	63	15.47	210
2-39	Females	23	59	17:59	209
	Males	42	61	15:27	203

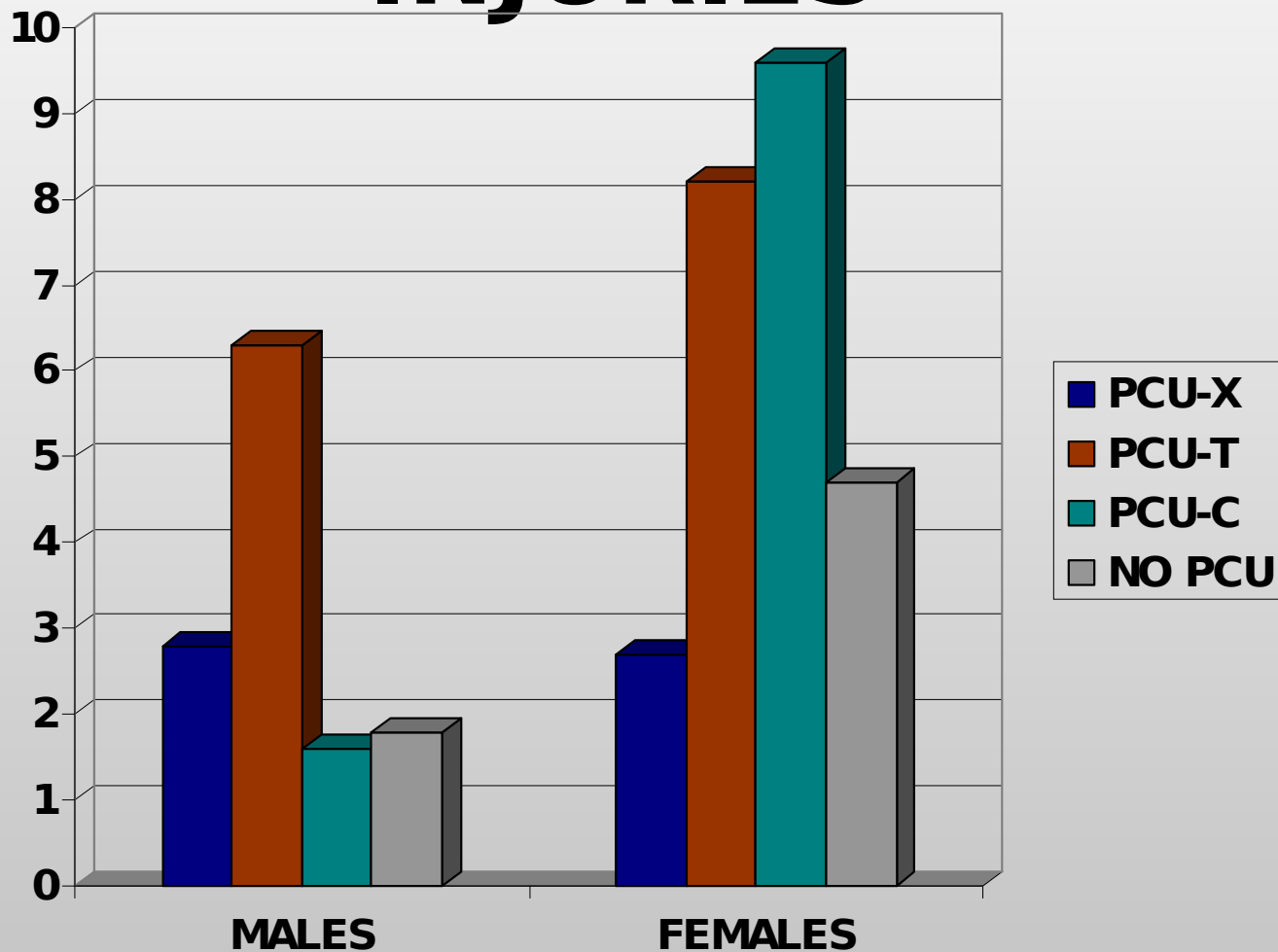
FY02 BCT APFT: Males = 219; Females = 218 (Knapik).

PERCENTAGE FINAL APFT FAILURES*

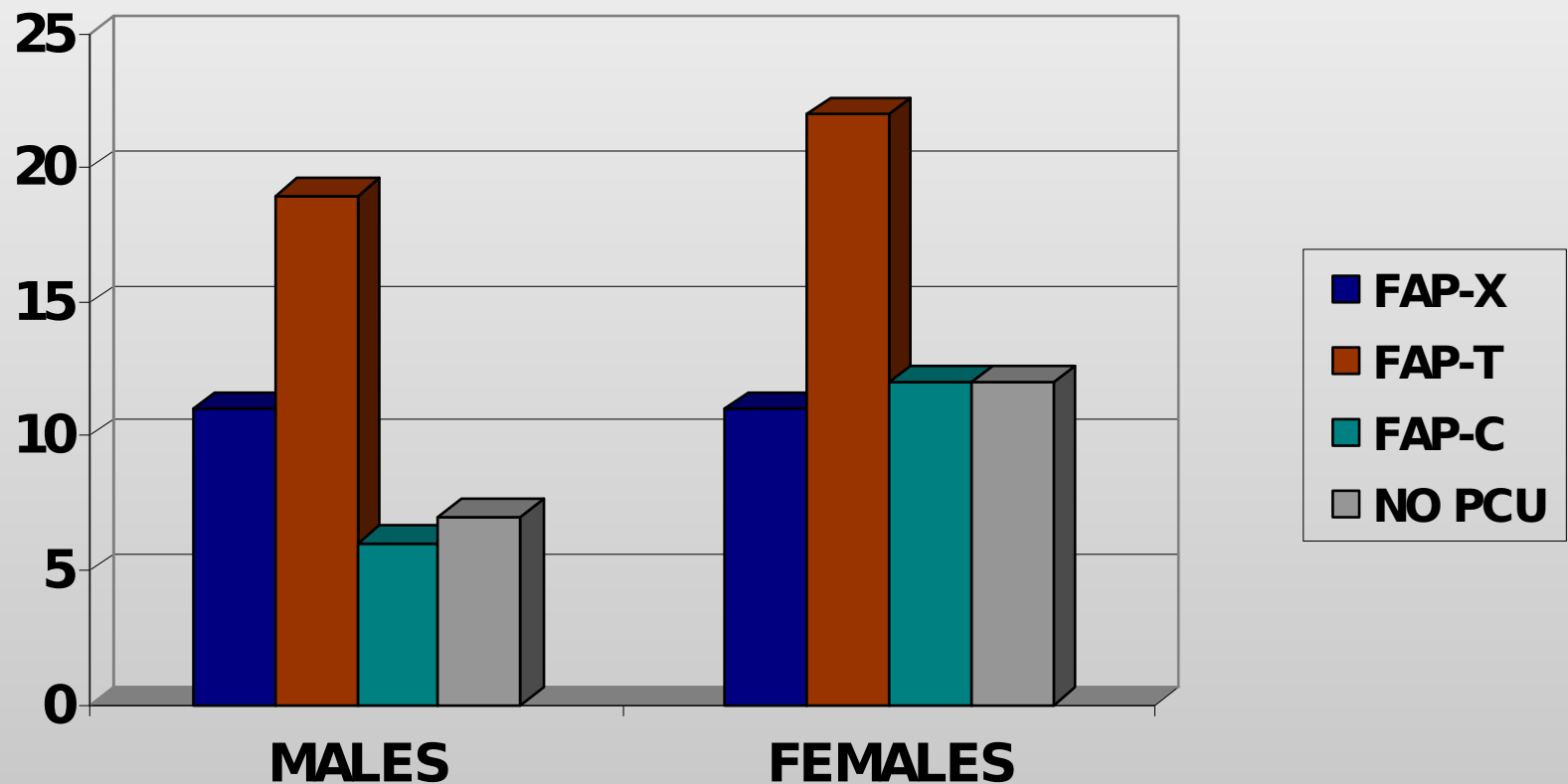


**Pending
confirmation
of 'fresh
starts'.**

PERCENTAGE BCT INJURIES



BCT ATTRITION: DISCHARGE PERCENTAGES



Initial Conclusions

Base upon participation in PCU-

- ~~All~~ cause attrition was lower than traditional PCU attrition (11% v. 19%).
- BCT Week 1 APFT scores were higher (M=130/103, F=134/82).
- BCT Week 7 APFT scores were higher (M=193/177; F=203/186).
- Female injuries were lower (2.7% v. 8.2%-T 9.6%-C 4.7%-N).
- APFT failure rate was higher for males and females (15% v. 10%).

FUTURE CONSIDERATIONS

- 1. Determine appropriate pre-accession physical fitness screening tool and standards.**
- 2. Conduct a PCU Risk Factor Assessment.**
- 3. Study of the proper 'length' of PCU/BCT.**
- 4. Properly resource PCU; facilities and trained staff.**
- 5. Conduct a PCU study that is "real world," taking into account logistics, equipment, and other constraints.**

- 6. Place Certified Athletic Trainers in the PCU, IET environment.**
- 7. Work with civilian contractors to provide healthier meal choices in mess halls**
- 8. Focus on development of life skills in the cognitive domain during PCU/BCT.**

QUESTIONS?

Backup Slides

INITIAL SURVEY RESPONSES:

SITs Who Pass/Fail the Initial RBn Fitness Test

Current Level of Fitness

	Yes	No	Total
Less fit to far less fit than average	377 43.6%	488 56.4%	865 100.0%
Average to far greater	248 15.5%	1348 84.5%	1596 100.0%
Total	522 22.2%	1829 77.8%	2361 100.0%
p = .000			

Participated in Running Exercises 3x/week or more

	Yes	No	Total
No	217 24.8%	675 75.2%	874 100.0%
Last Month	204 24.6%	626 75.4%	830 100.0%
≥ 6 months	103 13.6%	655 86.4%	758 100.0%
Total	524 22.2%	1835 77.8%	2349 100.0%
p = .000			

Participated in MSE Exercises 3x/week or more

	Yes	No	Total
No	325 23.6%	105 76.4%	1378 100.0%
Last Month	87 25.8%	250 74.2%	337 100.0%
≥ 6 months	110 17.3%	526 82.7%	636 100.0%
Total	522 22.2%	1829 77.8%	2351 100.0%

$p = .000$

Participated in Organized H.S. or College Sports

	Yes	No	Total
Yes	178 19.4%	739 80.6%	917 100.0%
No	345 24.1%	1087 75.9%	1432 100.0%
Total	523 22.3%	1826 77.7%	2349 100.0%
p = .008			

Taken Shots for Birth Control such as Depo-Provera

	Yes	No	Total
Yes	70 35.2%	129 64.8%	199 100.0%
No	186 24.0%	588 76.0%	774 100.0%
Total	256 26.3%	717 73.7%	973 100.0%
p = .001			

PCU-X Attrition v. APFT Failures

SITS per week	1500
PCU SITS	150 x 48 = 7200
PCU Attrition (19%)	1568 (attrit) / 5832 (ship)
PCU-X (11%)	792 (attrit) / 6408 (ship)
PCU APFT Failure (10%)	583
PCU APFT Pass	5249
PCU-X Failures (17%)	1089
PCU_X Pass	5319
Pass Delta	70

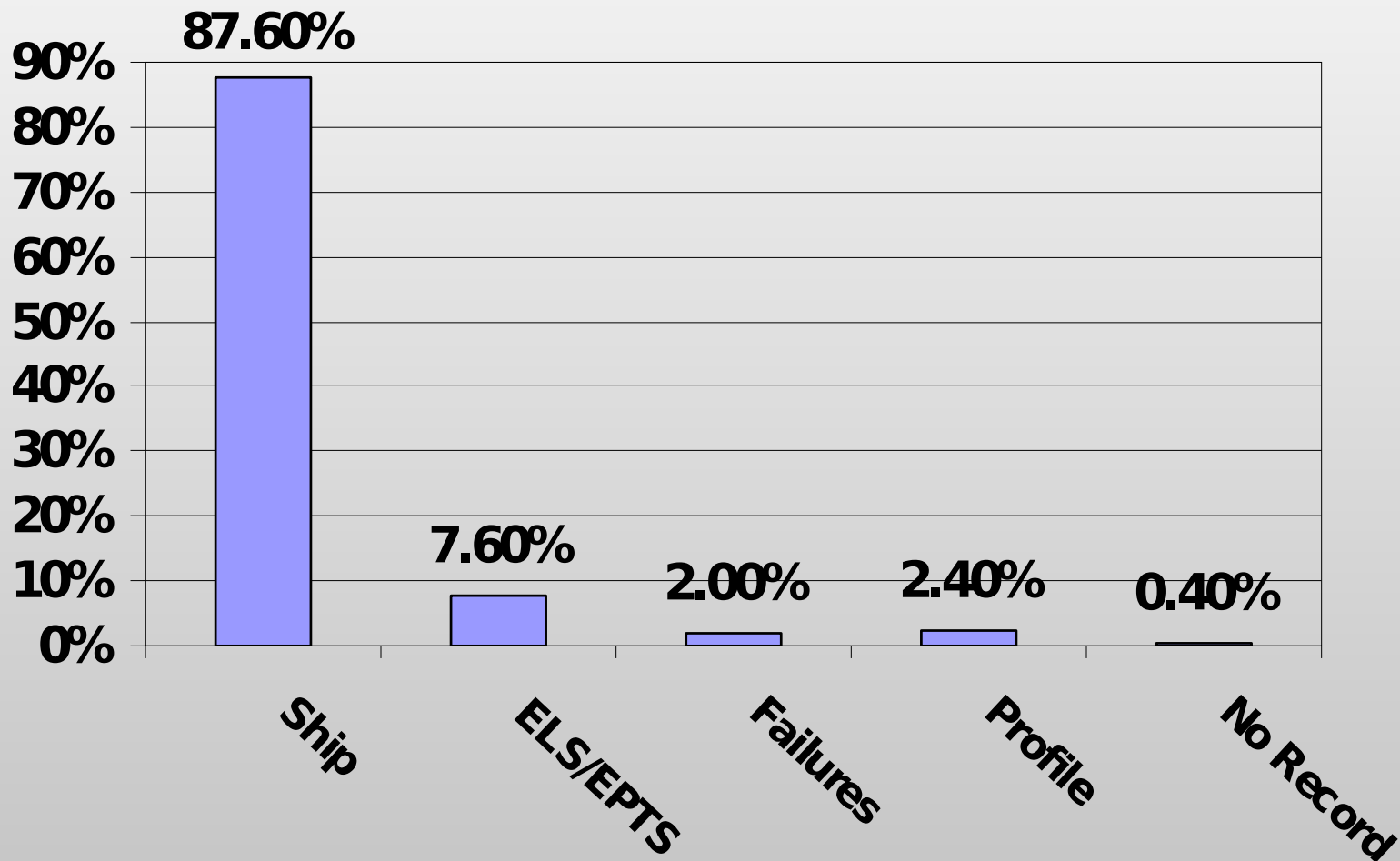
FAP-X Completion Stats

Participation Numbers			
Initial	Cycle 1	Cycle 2	Total
Females	68	59	127
Males	57	66	123
Total	125	125	250
Shipped	Cycle 1	Cycle 2	
Females	56	50	106
Males	48	65	113
Total	104	115	219

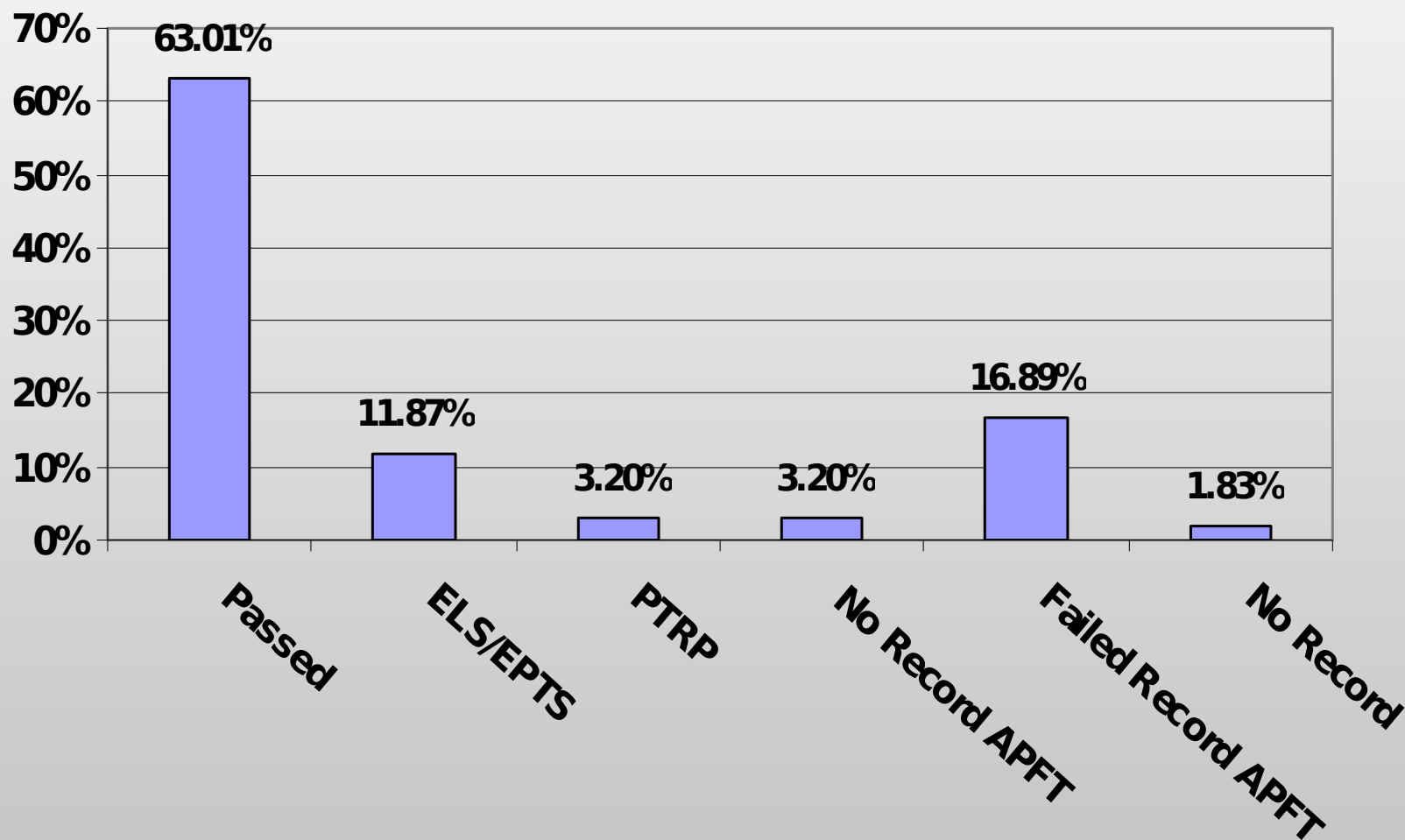
FAP-X Completion Statistics

Cycle Numbers and Percentages						
		Ship	ELS/EPTS	Failures	Profile	No Record
Cycle 1	125	104	5	11	5	0
Cycle 2	125	109	5	4	6	1
	250	213	10	15	11	1
Cycle 1 Holdovers	16	6	9	1	0	0
Final #	250	219	19	5	6	1
Final Ship %		87.60%	7.60%	2.00%	2.40%	0.40%

PCU-X COMPLETION STATS



FAP-X BCT Results



APFT Enhancement Results

Active	4	8.33%
Passed APFT	10	20.83%
ELS/EPTS	8	16.67%
No Info	7	14.58%
Failed No Info	19	39.58%
Total	48	100.00%

Final Injury Results

	Ship	IET PTRP	BCT PTRP
Cycle 1	104	4	6
Cycle 2	110	6	1
Cycle 1 Hold	6	1	
Final Ship	220	6	
		2.40%	3.18%

INITIAL SUMMARY OF FINDINGS

PCU-X

- **Sig. ↑ BCT ship rates.**
- **Sig. ↓ BCT injuries.**
- ✂ **↑ Week 7 APFT scores.**
- ✂ **↓ overall BCT attritions.**
- ✂ **↑ BCT Week 7 APFT failures**
(pending confirmation of 'fresh starts'.

Take Aways

- **Better assess incoming physical performance.**
- **4-weeks appears to be about right.**
- **PCU SITs need the cognitive/life skills piece to be successful for the long term.**
- **Motivation (caring) is crucial to PCU SIT's success and hardiness.**